ECHO for Clinical Research Professionals (CRP) – Session Summary of (i) Key presentation and (ii) Problem discussion from session held on 19 December 2025

(i) KEY PRESENTATION:

Managing Clinical Research Involving Medical Devices by Mike Voth, Director of Research Quality Integration, University Health Network (UHN) *(Slide deck attached).*

Clinical research with medical devices was described as distinct from drug trials, with unique regulatory pathways, authorization requirements, and safety obligations focused on device performance and risk management rather than traditional drug trial phases.

Key points from the presentation included:

- Medical devices were defined broadly, from simple disposable items to complex implantable technologies, with certain software also qualifying as a device when used for diagnosis or treatment.
- Devices are classified from Class 1 to Class 4 according to risk, using Health Canada rules based on invasiveness, duration of contact, and the body systems affected.
- Device studies were contrasted with phase 1–4 drug trials, using pilot and pivotal studies that emphasize safety and performance, with many lower-risk devices never requiring human trials.
- Blinding and placebo use were noted as often impractical for devices, making designs more flexible and typically shorter in duration than pharmaceutical studies.
- Investigational Testing Authorization (ITA) was identified as the device equivalent of a clinical trial application, required for unlicensed Class 2–4 devices but not for Class 1, licensed devices used per label, or some in-house, same-institution devices.
- Only manufacturers (or importers) can obtain an ITA, and they must hold technical records, risk assessments, and marketing history that support the application.
- The investigator's agreement under section 81 commits investigators to follow the protocol, maintain records, and report safety issues.

Safety and GCP requirements

- Device malfunctions or failures in investigational testing must be reported to Health Canada within 72 hours, even if no harm occurred, using mandatory incident reporting pathways.
- ISO 14155 was highlighted as the good clinical practice standard for device trials, requiring integration of risk management and hazard analysis into the protocol (e.g., electrical, staff, and participant risks with defined mitigations).
- Investigators must maintain device traceability and, for implants, inform Health Canada of device identifiers and recipients to support safety follow-up.
- New equipment must obtain institutional approval to ensure it meets electrical and safety standards before use in a study.

Policy nuances and "in-house" devices

- It was explained that devices created and used entirely within a single institution, without sale, can in some circumstances fall outside medical device licensing and ITA

requirements, even if used in patient care, provided they are regulated under the practice of medicine.

- This led to the observation that a complex, custom-built device could theoretically be used clinically without Health Canada device approval, which participants found surprising.
- These activities were framed as still falling under professional and institutional regulation, even when not captured by federal device licensing rules.

Points made during the Q & A discussion which followed the presentation:

- Participants expressed surprise that responsibility in device trials often rests more heavily on manufacturers than investigators, and that in-house devices can sometimes be used without formal Health Canada authorization, which felt very different from drug trial norms.
- Concerns were raised about what happens if something goes wrong with such in-house or "Frankenstein" devices, highlighting the perceived absence of an external regulatory safety net.
- It was clarified that even when a device is out of scope for medical device regulations, the work is still research and remains subject to REB review and institutional policies.
- A question was posed about high-risk devices and ITA exceptions, and it was clarified that once a technology clearly meets the definition of a high-risk implantable device, it is by definition a medical device and requires both ITA and REB approval, not just clinical discretion.
- The concept of "research-only" devices used with humans but not for direct medical benefit was described as a gray zone, yet still under ethics oversight.

Guidance document

- A Canadian Government guidance document on determining medical device application types was shared by an ECHO participant: Guidance for determining medical device application type: Overview - Canada.ca

(ii) PROBLEM DISCUSSION:

Under what circumstances must participants be verbally informed of protocol amendments or newly identified risks *before* REB approval is obtained?

ECHO community members contributed their experiences and ideas as follows.

- REB approval is required before informing participants about amendments, as research teams cannot communicate unapproved changes.
- The operational sequence for changes was clarified as follows: obtain REB approval, then site approval, then sponsor authorization, and only then communicate with participants.
- Only changes required to eliminate an apparent immediate hazard to participants may be implemented prior to REB review.
- For significant new risks, study interventions may be placed on hold while awaiting REB feedback.
- Sponsors hold primary responsibility for risk assessment and mitigation planning, including setting thresholds that trigger immediate action.

- Sponsors determine the risk thresholds that guide when updated information is submitted for REB review so participants can better understand emerging risks.
- For potentially clinically significant symptoms (for example, symptomatic bradycardia), the PI should be consulted because the PI carries clinical responsibility for participant care.
- The PI may make individual, patient-specific decisions to disclose information immediately when there is imminent risk, even if REB approval of an amendment is still pending.
- The PI's clinical judgment can supersede standard procedural steps when immediate patient safety is at stake.
- Any decision to deviate from the approved protocol must be carefully documented, including who authorized the deviation, what was communicated, when it occurred, and by what means, particularly for patient safety assessments.
- Participants noted that the training excerpt in question appeared inconsistent with standard regulatory expectations around approvals and communication.
- There was agreement that appropriate approvals should be in place before patients are notified of new information, except where immediate hazards necessitate urgent action.
- The PI and clinical team at the site level are the ones most immediately in touch with participants and are responsible for overseeing patient safety.
- GCP guidelines allow flexibility when there is an immediate hazard to one or more participants, permitting the PI to deviate from the protocol if necessary to eliminate that hazard, even if the deviation does not apply to all participants.
- In an inpatient cardiac study example, an additional test was implemented during the intervention or when specific symptoms appeared, even though it was not in the original protocol, because it was medically necessary and there was no time to obtain prior approval.
- Such protocol deviations can be justified when patient safety is at immediate risk, with the team reporting them to the REB afterward along with the broader protocol amendment, identifying which participants received the additional test and the clinical rationale.
- The decision about whether to go back and inform past participants of the change can be made at the time of submitting the ICF or protocol amendment for future participants.
- Advance planning and wording in the original application can explicitly allow certain safety-driven deviations, giving more flexibility when unexpected issues arise.
- There was agreement with earlier comments on handling protocol deviations, the PI's role, and the importance of documentation and site-level decision-making.
- The Data Safety Monitoring Board and medical monitor on the sponsor side are key partners; when an unexpected safety issue arises, one of the first actions should be to ensure the sponsor is informed.
- The sponsor tracks safety events, determines whether stoppage criteria are met, and decides whether additional regulatory reporting requirements have been triggered.
- Multiple processes should run in parallel: notifying the sponsor and DSMB while also meeting REB reporting requirements, using existing REB guidance on immediate reporting and unanticipated side effects not aligned with the Investigator Brochure.
- The study coordinator plays an important role in keeping the sponsor informed and coordinating communication among different stakeholders.

- For non-immediate safety issues, upcoming amendments should not be mentioned to participants before approval is received so as not to create unnecessary confusion.
- If there is an immediate safety concern, all relevant parties should be notified promptly and processes coordinated to address the issue.
- Contacting the sponsor and medical monitor is particularly important, as these are highly useful resources for assessing safety concerns and next steps.
- It can be more efficient to contact the medical monitor directly, rather than first approaching the study monitor who will likely forward the concern, so having the medical monitor's contact information readily available can narrow timelines and speed feedback.
- One cautious approach when new risk information arises is to put the intervention on hold until feedback is obtained from the REB.
- An example from a food-based randomized controlled trial showed that protocol deviation may be necessary not only for direct safety concerns but also when an issue (such as an aspect of the intervention) significantly affects attrition and study feasibility.
- In that example, the team prepared a report and presented it to both the REB and sponsor immediately, successfully obtaining approval for the deviation, illustrating that prompt, transparent reporting supports approvals.
- Difficulties for regulatory writers often stem from inflexible protocols when sites deviate during conduct, sometimes leading to entire sites' data being discarded and substantial risk to study integrity.
- Implementing changes without approvals is especially problematic in multi-site trials, where a single site's deviation can result in removal from the study and jeopardize future funding for that site.
- Building flexibility into protocols from the outset and obtaining all necessary approvals before implementing changes—except in situations of absolute immediate harm—are critical principles.
- ICH GCP E6(R3) emphasizes a "quality by design" approach, integrating quality considerations across the study lifecycle from design through conduct.
- This includes anticipating potential issues during protocol design, applying risk-based management throughout, and ensuring responses are proportional to the level of risk.
- Proper application of these ICH E6(R3) principles can reduce downstream problems with protocol deviations and final submissions by anticipating potential deviations and structurally incorporating flexibility into the protocol.